REPORT RESUMES

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THE DEVELOPMENT AND TESTING OF INSTRUMENTS AND PROCEDURES FOR A STUDY OF STUDENT SELECTION PRACTICES IN TECHNICAL EDUCATION PROGRAMS.

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TENTATIVE DATA COLLECTION PROCEDURES, DATA COLLECTION INSTRUMENTS, AND APPROPRIATE INTERVIEW FORMS THAT HAD BEEN DEVELOPED FOR USE IN A LATER SURVEY OF POST-SECONDARY TECHNICAL INSTITUTIONS WERE TRIED OUT IN FIVE REPRESENTATIVE SCHOOLS. THE FOLLOWUP STUDY WAS PLANNED TO BE A LARGE-SCALE INVESTIGATION OF STUDENT-SELECTION PRACTICES, ADMISSION POLICIES, AND FOLLOWUP ACTIVITIES OF APPROXIMATELY 40 SELECTED INSTITUTIONS. FROM THE DATA COLLECTED, THE INVESTIGATORS PLANNED TO IDENTIFY CURRENT PRACTICES THAT WERE EFFECTIVE IN INSURING THAT ALL PROSPECTIVE TECHNICAL EDUCATION STUDENTS WOULD BE EDUCATED TO THE MAXIMUM OF THEIR ABILITY. TO TEST THE ADEQUACY OF THE TENTATIVE INSTRUMENTS FOR DRAWING THE KINDS OF CONCLUSIONS DESIRED, CAREFUL RECORDS WERE COMPILED REGARDING THE EFFECTIVENESS OF THE PROCEDURES AND OF THE INDIVIDUAL ITEMS OF EACH INSTRUMENT, AND A REPORT WAS WRITTEN ON THE HYPOTHESIS THAT THE DATA GATHERED IN THE PILOT STUDY WAS INDICATIVE OF GENERAL CONDITIONS. THE FINDINGS OF THE PILOT STUDY AND THE TENTATIVE CONCLUSIONS DRAWN WERE INCLUDED IN THIS REPORT. THE TENTATIVE CONCLUSIONS WILL BE TREATED AS HYPOTHESES TO BE TESTED IN THE LARGER STUDY. THE PROCEDURES AND INSTRUMENTS WERE REVISED FOR USE IN THE FOLLOWUP STUDY ON THE BASIS OF THE EXPERIENCE GAINED IN THE PILOT STUDY. (AL)

Final Report
Project No. 6-8255

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THE DEVELOPMENT AND TESTING OF INSTRUMENTS AND PROCEDURES FOR A STUDY OF STUDENT SELECTION PRACTICES IN TECHNICAL EDUCATION PROGRAMS

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Final Report - Summary

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(b) "The Development and Testing of Instruments and Procedures for a study of Student Selection Practices in Technical Education Programs"

(c) Investigator - George Whitney - Professor of Engineering Technologies
Alfred University

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(f) Objective - The objective of this project was to develop suitable procedures and appropriate interview forms and data collecting instruments for use at a later date in a large-scale study of student selection practices, admission policies, and follow-up activities of some forty selected technical education institutions, with a view to identifying current practices that are effective in insuring the education of all prospective technical education students to the maximum of their potential, including educationally or socially deprived youth as well as well-prepared students of high ability.

(g) Procedures - 1. The project director and project consultants developed appropriate procedures and instruments on a tentative basis.

2. The principal investigator and research assistant tested the tentative procedures and instruments by actually trying them out in five selected post-secondary technical education institutions. Careful records were compiled regarding the effectiveness of the procedures and of the individual items in each instrument. The materials were tested by writing out a report with preliminary hypotheses of what might be found in the larger study if the pilot study were indicative of general conditions. This provided a test of the adequacy of the instruments for drawing the kind of conclusions desired.

3. The project staff and the project consultants revised and refined the procedures and instruments on the basis of experience gained in Step No. 2 above.

4. The final version of the procedures and instruments was prepared.

5. This final report was produced in multiple copies. The final report: (a) summarizes the findings in the five pilot institutions involved in this project and (b) presents the refined procedures and instruments recommended for later use in a large scale study of forty or more technical education institutions.

Results and Conclusions

The useful practices found

While only one institution visited had a comprehensive system of reporting and control that appealed to the interviewing staff as reasonably complete in following the progress of the individual, all had specific operations that seemed to contribute to the maintenance of quality. None had a comprehensive system of institutional self-evaluation. Among the useful practices were:

1. Special curriculums for persons with inadequate prior education.
2. Specific efforts to help students overcome areas of weakness.
3. In-service training for teachers.
4. Personality ratings by high school staff for pupils to be considered for admission.
5. Careful ratings by teachers and work supervisors involving work habits and attitudes.
6. Extensive counseling to help students select proper programs.
7. Follow-up on graduates to establish kind of job and success in filling it.
8. Placement service to insure that all graduates get jobs.
9. Comparison of characteristics of students with success in school programs.
10. Frequency distribution review of grades given to identify weak spots in curriculum or teaching staff.
11. Lateral transfers from curriculum to curriculum within an institution to help students find a program they like and in which they do good work.

Implications of the findings

1. The selection process must be considered in relation to the program. There is no value in admitting students unless the admitting institution has a program suitable for them as individuals as well as aimed at their goal.

2. Curriculums must be designed for types of persons as well as for job clusters. The pre-technical course discussed in prior sections of this report is an illustration of a course designed for certain types of individuals with certain goals.

3. The selection process cannot be satisfactorily judged until objective standards of educational success have been established. At present no one knows what kinds of marginal students can be helped or what the maximum capacity of a student might be.

4. The selection process must consider the needs of the whole group. From the social point of view, an institution has not established the soundness of its admission policy by showing that everyone admitted succeeded. It also has to show that everyone who might logically have applied and was capable of doing the work was admitted.

5. The establishment of objective standards will require the maintenance and analysis of longitudinal record files. The essence of quality measurement in these institutions is in relating guidance decisions with results and this can only be done by following the individual over a period of years through the whole process of admission, education and early job experience.

General Comments

The most serious difficulty in the selection process from the view point of this study appears to be the limited concept of institutional responsibility of making a success of the student who comes to them. Many merely select the ones that seem to be obviously suited to their programs. Others, the open admission type, consider that they have met their responsibility when they have admitted the student and the student adjusts to their offering or drops out. None of the schools visited had a continuous program of determining why drop-outs occurred or what their characteristics were. In one school visited there was a general effort to open alternative routes specifically designed for the identified needs of particular students or kinds of students and in two others there were limited alternates.

All of the schools probably have programs that are used successfully for meeting particular problems. The schools with a Pre-technical program or corrective courses illustrate this. These are excellent as far as they go and represent a most commendable alertness on the part of the administrators in seeing a need and meeting it. However, the recognized needs appear to be only a few of the needs. The basic need is for a system of responsibility that will result in statistical analysis of the school operations so that all the needs will be observed and met. To do this, records must be kept of what happens to different kinds of students as they proceed through the technical programs. The policies of the counselors must be checked against the realities of who succeeds and who fails. The failures must all be studied to establish the cause of failure and reviewed to see if the cause is an invariate that cannot be modified. If an adjustment is possible, the technique of the adjustment must be worked out.

One school acting alone can seldom determine the ultimate possibility inherent in each type of pupil because the various potentials will only show themselves in different environments. If expectancies could be worked out in a cooperative program among a group of schools there would be an increasing possibility of getting effective action at the school level. The A.T.E.A. proposes to help in this cooperation or coordination.

The above discussion goes a long way on a weak foundation-observation of five schools. The discussion is only valid if the five schools are representative of all schools. The purpose in carrying the analysis so far on a pilot base is to show the nature of the evidence and the conclusions that can be drawn in a larger study. In other words, to show that the pilot study has demonstrated the need for a larger study and has demonstrated the soundness of the plan and instruments that have been developed.

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The Development and Testing of Instruments and Procedures for a Study of Student Selection Practices in Technical Education

The objective of this project was to develop suitable procedures and appropriate interview forms and data collecting instruments for use at a later date in a large-scale study of the student selection practices, admission policies and follow-up activities of some sixty selected technical education institutions. The purpose of the interviews was to identify current practices that are effective in insuring the education of all prospective technical education students to the maximum of their potential, including educationally or socially deprived youth as well as well-prepared students of high ability.

The Procedure: The institutions to be visited were selected on the basis of the judgement of the staff and the published statements of the institutions. The goal was to find schools that were giving more than average attention to quality, particularly to making good use of the ability of the students applying to them. The staff, after visiting the schools felt that the selection had been satisfactory. The schools visited had special practices that merited attention. An improvement in the process of selecting schools is planned for the larger study, namely, to send a short questionnaire to all the schools offering occupational programs to identify those that believe they have unusual methods of improving the qualify of their operations. This will give considerably more information on the location of special methods and should insure that the large study will cover all institutions with a potential contribution to the study. (The proposed questionnaire is shown in Appendix B).

The interviews were developed to induce the various key officials, president, deans, curriculum planners, department chairmen, and guidance director, to comment on the phases of the school's activity critical to the selection process and curriculum planning. In the view of the staff, the instruments were successful. The findings given later in this report, which were secured by the instruments, raise a number of important hypotheses concerning the underlying problems of selection and curriculum planning in the technical training programs to be explored in the main project. Some of the hypotheses, if supported by more evidence, would indicate a need for changes in organization and integration of the school operations. The potential significance of the suggested hypotheses substantiates the survey staff's belief that the instruments were effective.

The Instruments

The instruments in this survey study consist of a series of partially structured interviews with the president, the person in charge of curriculum in some cases, department chairmen and the guidance director, plus a very simple form to which some sample pupil records can be transferred and viewed graphically. This form provides a method of testing the possibility of securing the needed inter-relationships of pupil characteristics, curriculum and job from the records maintained. In many cases, this last form was not needed as it was possible to Xerox the pupil record folder. The instruments are shown in Appendix A.

Testing the Instruments

The final test of the instruments is whether they produced a vivid picture of what is actually going on in the institutions. A subsequent section of this report will deal with the conclusions one could draw from the pilot study visits to the five institutions if one could assume that they were representative of the universe.

At the intermediate level of testing, the individual items were reviewed to see if they contributed anything or if they irritated the interviewees. In general, the process was well received and seemed to stimulate some of the interviewees so that they made notes for their own action. A few questions seemed to make some of the interviewees uneasy or impatient. These were eliminated where possible, although in some cases these dealt with a basic difficulty of the institution and the impatience may have been discomfort rather than a feeling that the question was irrevelant or unneeded. In these latter cases the questions were retained. Since the interview outlines were used for note taking, the questions were respaced to provide the extra room for notes.

The Findings

The following comments apply to the five institutions visited. A sample of five is too small to be representative of the total group. The analysis of the pilot study group does show the kind of information to be reported in the main study and each tentative conclusion drawn here constitutes a hypothesis to be tested in the larger study.

The purposes of the institutions vary widely. Some institutions are essentially opportunity schools. Others have identified specific jobs that need to be filled and have set up programs for training persons for the jobs. In one sense the opportunity school might be classified as fundamentally designed to meet problems of the student and the others, job or industry oriented, in that they are providing what industry needs. Actually such a classification is perhaps as confusing as it is superficially correct. The needs of the student and the needs of industry in many ways interlock so that what is good for one is good for the other. When one talks with the leaders of all these schools one finds a real interest in both sides of the duality. In other words, practice tends to coincide where apparent purpose seems quite diverse. All of the schools are conscious of the absolute necessity of providing graduates capable of doing the required job. If they fail in this the school is a failure. Similarly all the schools are conscious of the need to serve the students. If no students come, the school is a failure.

The point at which some of the schools fail to attain the quality level sought in this study is that they do not recognize all the important ways that students vary. They tend to discard those that do not fit in their program. The discarding operation in some schools is refusal of admission and in others failure after admission. By setting up programs suitable for more kinds of people, the success ratio can probably be raised. There are, of course, some pupils who are incapable of technician level work. One school visited operates several trade and semi-skill programs as well as technical programs. This school attempts to serve all students who are admitted to their several technical programs. A lot of addmitional work needs to be done in attempting salvage before an institution can properly label the existing discards as inevitable.

The implied hypothesis here is that many students now dropping out of technician programs or not even attempting to take the programs because of refusal of admission by a restricted admission institution or inability to perform required work in an open admission institution could successfully complete such programs if an organized attempt were made to identify their individual difficulties and find "crutches" to offset the individual difficulties. Two of the five schools are offering pre-technical programs which support this contention. A third school is convinced of the truth of this hypothesis and with grant support is organizing a comprehensive test of the idea. The main study for which this is the pilot is designed to establish stronger evidence which will prove or disprove this hypothesis by increasing the number and variety of institutions visited and possibly finding some institutions that are getting results by adopting this policy. It is certain to establish the extent to which this hypothesis is accepted for policy making and the extent of the needed development work if the hypothesis is correct. The sample of five schools in the pilot study would indicate that few institutions, if any, are fully responding to the implied requirements of this hypothesis.

The full implementation of this idea requires a comprehensive institution offering a series of programs for each occupational goal so that a student could readily transfer into the program he needed for his special limitations or handicaps. Such an institution would probably be so large as to be administratively top-heavy. In actual practice because of the difficulties of operating very large institutions the problem presumably must be met by cooperation among separate schools rather than by the creation of extremely large schools. The main study would seek indications of innovative policies leading to needed solutions. One obvious solution is a regional clearing house where specialists familiar with the total resources of the region could refer students to institutions particularly adjusted to their needs.

At certain simple levels such an operation is already functioning in an informal manner. For instance, one of the institutions visited was sending a particularly well qualifed student to another institution, in the sample of five where the student could get exactly what she wanted. All the two-year institutions apparently try to help qualified students go on for advanced work in four-year institutions but this is on the basis of the limited knowledge concerning four-year institutions, available in the sending institution. The lateral transfer between two-year institutions has not been developed appreciably if the sample of five in this study is at all indicative of the universe.

The main study should also provide elementary information on the variability of curriculums from institution to institution. Are the curriculums in each institution replicas of one another or are some making innovations that increase the probability of success with certain types of individuals?

The survey, of which this study is a pilot, can only make a beginning on exploring this problem. A special follow-up survey in greater depth would be logical in the institutions where this survey found some indiciations of significant variation in curriculums. This could then be followed by the proposed intensive development of administrative operating reports showing the proportion of particular type persons successful in each program.

The ultimate innovative outcomes of this hypothesis might be:

1. A regional system of lateral transfers to place disadvantaged individuals into the training program that would be most likely to motivate them and provide them with the help they needed.

2. The encouragement of differentiation among the institutions of a region so that each institution would have a somewhat special character based on the aptitudes and interest of the staff and the needs of particular kinds of students.

3. The development of a system of administrative reports that would show the proportion of each type of student succeeding in each curriculum.

Thus, many of the benefits of a large scale training institution could be obtained while retaining the benefits of small units and decentralization.

The five institutions visited in the pilot study represented considerable differentiation in purpose and structure. Two had limited number of programs with a restrictive admission policy which endeavored to limit admissions to those who would succeed. Two were large open admission schools available to everyone with a high school education. Special technical programs had pre-requisites which paralleled the restrictions of the limited admission institutions. The outstanding characteristic of the open-admission schools was the existence of extensive night school courses to which an ambitious person, not able to maintain technical course standing, could turn. The difficulty with these programs seemed to be that night school courses did not meet the desire of the applicants for college training. It lacked motivational force and many students just gave up.

The remaining, or fifth institution in the pilot study, had a restrictive admission policy but on a different basis. It had a relatively broad program so that an admitted student could choose among many curriculums. Its restriction on admission was more by the general ability of the student rather than by his probable ability to perform in a specific curriculum. Once having accepted the student, he was transferred laterally into what seemed his optimum program and was shunted into supplemental programs to overcome weaknesses as they became apparent. For the students admitted, this institution seemed to be accepting the responsibility that society appears to need in the present day world of great demand for technicians.

The implementation of purpose

In the pilot study sample of five the success of the implementation of the apparent purpose of the institutions was variable. The limited evidence suggests the hypothesis that where the institutions have the limited goal of training as many people as they have space for, for specific occupations, they are succeeding quite well but that where the goal of the institutions is to provide suitable occupational training for all high school graduates there are obvious deficiencies. The main study is designed to check this hypothesis.

The deficiencies center around the failure of the schools to explore the effect of curriculum variations on success or failure in programs for particular kinds of individuals. Perhaps a restatement of the hypothesis will make the difficulty clear. Another way of stating the hypothesis is that to the extent that the purpose of technical education is to train technicians from the best available candidates the present organization and techniques are reasonably adequate but that to the extent that the purpose of technical education is to obtain the highest technical functional level possible from the candidates seeking an education, the present organization and techniques are probably inadequate. In other words, the present institutions do design suitable training programs for selected occupational goals and turn out a quality product that meets the needs of industry. In four out of the five institutions visited, the assumption seemed to be that there was a curriculum for a job-cluster and that those who could not perform in that curriculum were not suited to the goal. This appears to be an oversimplification of the complex of interacting forces that create suitability of an individual to a job. For instance, it largely ignores the important part that motivation plays in modifying an individual's ability to fit in a particular niche.

All of the schools had application blanks and required some transcript of high school records. In the selective schools more attention was given to teacher grades, college boards and aptitude tests than in the non-selective schools. The pre-admission data was apparently used in the selective schools to guard against admitting incompetent people. In the non-selective schools it was used for counseling the prospective student on the merits of different programs for his need. Only one school had a comprehensive study relating student characteristics to success in the courses. None of the schools had comprehensive studies relating degree of success on the job to success in school or characteristics of the applicant with degree of success on the job. There is, of course, a good deal of observation by the various administrators of the interrelationships of these factors but the point is that this is not done in a scientific or rigorous manner. All of the schools were successfully placing their graduates but this has limited meaning in a tight labor market. Moreover, all these schools had been selected as schools with good reputations for successful training and placement.

The response to our question in the interview "How have you objectively established that these factors correctly identify the persons applying in terms of your stated purpose" were usually that they did not have an objective method. They thought it did, based on general observations. In one curriculum in one school the person in charge of the curriculum had identified the persons admitted by their apparent suitability to the curriculum. Among those he considered of doubtful suitability, fifty percent ultimately succeeded on the job. Of those he considered suitable the success proportion was sixty percent. The difference is rather small and the fact that fifty percent of those considered not suitable succeeded certainly suggests that a great many capable people would be excluded if the ideas on suitability were enforced. The need for more information of this type is acute. One school with a computer program for identifying student needs and providing programmed learning to meet them, should provide much of this needed information when its program has been in operation longer.

The problem of achieving suitable homogeneity in instructional groups was approached by asking the question:

"Does your selection process result in a sufficiently uniform student body so that a single curriculum will be suitable to all?" The answers in the four schools with somewhat standard programs generally were that there was little information available and that they had only one curriculum for an occupational goal. A pupil could shift to another goal with an easier curriculum but if he does not want to change goals, the slow student in a tough curriculum is just expected to work harder. There are special courses to correct evident weaknesses in two of the schools but these do not appear to be really integrated into the regular program. There does not appear to be a system of allowing the slow student to take an extra semester or year to complete a two-year program except by the clumsy process of failure and repeating a course. The general answer seems to be that the admissions policies do not achieve the needed homogeneity and that this may be an important factor in the substantial attrition rates, particularly in the open-admission schools. The administrators in the institutions all felt that they were achieving adequate homogeneity but they had no satisfactory objective evidence to prove it.

When the question was asked:

"What are the characteristics that separate the curriculum groups", the answer generally was a vague response. In one case, an unusually inquisitive curriculum head thought that prior difficulty with algebra was an indicator of probable trouble in his program. In other words, counselors are advising students, but little is really known about who can and who cannot achieve in a particular field. One large school is making a careful study of the relationships between the characteristics of applicants and their achievement in the program. The findings in this school should be studied to obtain any information that would help other schools. One is hard pressed to see how the work of a counselor can improve unless the institution has a reporting system that tells him whether the pupils who did what he recommended succeeded more frequently than the ones who refused to take his recommendations.

In an effort to find what steps are being taken for the persons with limited prior opportunities (i.e. slum backgrounds or other indications of deprivation) the following question was asked:

"Do you identify students who have had limited opportunities for development and make suitable adjustments for them. If you do not consider these persons your responsibility, what institutions in your area accept them"? The responses were generally negative. One school has a special entrance program designed to bridge the gap between poor experience and average experience but at present this problem is largely ignored. The schools with the "bridge" or "Pre-technical" program are primarily meeting the problem of the student with a poor academic background rather than poor social or cultural background. One other school indicated that it gave attention to this problem, but did not explain how.

Another question that attempted to explore the extent to which individual differences are considered was:

"Do you have any special treatment for the student with a generally satisfactory, but irregular record in high school? i.e. a student with very good records in some subjects but poor records in others? If you do have a treatment for these people, does it consist of pushing the areas of strength or of weakness? Is your goal a balanced individual or an extreme specialist"? The answers generally were that little attention is given to such items, but two schools are definitely working to develop all students to their maximum potential. Two other schools said they tried to strengthen the weak area and in the sample cases reviewed there was some indication that at least one was accomplishing its purpose. This was the same school that had the Pre-technical program. This groups of irregular performers is quite large and the variability suggests that many individuals are not working close to their ability much of the time. If technical institutes are to perform the service society needs and train individuals to the maximum of the individual's ability, then these factors must be given attention.

The Faculty

The faculty is one of the vital factors in the development of the technical institutes and in establishing the kind of student admitted. If the individuals are to be developed to their maximums, the faculty must be selected to match their needs. All of the four schools in the pilot project with approximately standard programs reported that they hired instructors with medium I.Q.'s. One might hypothesize that the institutions had found the middle I.Q. group to be particularly suitable to technical program teaching. The students in technical programs are assumed to be of middle I.Q. stature since the high I.Q. students are presumed to go to a four-year college. This is an important question and any exceptions to this hypothesis found in the larger sample may help in evaluating the soundness of the apparent hypothesis accepted by these institutions.

Theoretically, the hypothesis does not appear to be sound. It is true that for some purposes middle I.Q. people are particularly suited to teaching middle I.Q. people. They can understand the problems of the not-so-bright better than a high I.Q. person might. On the other hand, the problem of teaching persons becomes harder the lower the I.Q. A high I.Q. person frequently learns almost spontaneously while a low I.Q. person has to have the help of clever teachers. The logical answer seems to be that the technical institutions need to hire some high I.Q. teachers capable of pioneering new teaching methods. If all institutions are following this easy path of hiring medium I.Q. persons, then a further explanation of the implications of the practice should be undertaken and techniques sought for overcoming the potential limitation on leadership implied in the practice.

The recruitment of teaching staff is a problem in most institutions. In academic subjects, experienced teachers can be recruited from the secondary schools but inexperienced teachers have to be hired for some technical subjects. Some of the institutions have in-service training for new teachers and make frequency distributions of teacher grades to find teachers who are having difficulty in getting their materials to the students.

The Institutional Organization

A general principle of organization is that if one assigns responsibility he should arrange for suitable authority. A hypothesis frequently discussed in technical education is that teaching methods and course content should be adjusted to the occupational purpose and to the type of person recruited. This is generally implemented by having a technically oriented person in charge of the technical programs. The pilot study has explored this and the evidence from the five schools suggests that in practice the hypothesis is modified to - the technical subjects in technical education should be adjusted to the occupational purpose and the type of person recruited. The technical courses are under the control of a technical specialist but non-technical courses are generally under the control of a department head who is not a specialist in technology. Thus, English courses are under the control of specialists in English and the technical personnel cannot enforce desired changes. If the larger study shows that this condition is general, a supplementary intensive study of the problem should be undertaken to find the full significance of the failure to meet the original hypothesis that the total education should be adjusted to the technical goal and the type of persons recruited for it.

Another organizational difficulty indicated in the pilot study is in the area of guidance. The hypothesis under which guidance service is offered is that persons familiar with the total problem of the individual and well informed on the alternatives available to him should help him. Toward this purpose the technical training institutions have guidance counselors who review the student's background and advise him on initial decisions for his program. When the student is admitted he is assigned to a faculty advisor. The surprising point is that most of the schools do not provide a mechanism by which the counselor service can retain control of the counseling process. The student is apparently dependent on the ability and interest of his individual faculty advisor. If the evidence of the larger study shows that this condition is general, further study will be required to find a practical solution.

Faculty advisors are given the current marks of the students they are advising and pupil record files are available in the central files. There seems to be insufficient organized transmittal of the observations of faculty advisors to curriculum heads to furnish a factual basis for the adjustment of the curriculum to the students. No systematic flow of this material goes to the president to stimulate him to action except in the one institution with a computerized program of analysis.

The grading system

The principal measure of student progress in the technical programs is student grades. The granting of credit is almost wholly dependent on grades. The feed-back to the student is grades. With grades such an important factor in the success of the student and the success of the institution, it is surprising how little attention they receive in most institutions. Three of the five institutions made frequency distributions of teacher grades by teachers to see if any teachers were badly out of line. None of the institutions created expectancy groups, i.e. students that normally should redeive high grades and students that would normally get low grades because of prior demonstrations of ability.

The self-evaluation of the institution

As already noted, there is considerable attention given to the measurement of students. Reasonably definite admission policies are stated and pupils are graded even if the grades are not uniform in meaning. The reverse side of this operation is the measurement of the institution by itself for its own information. In all the institutions visited this type of procedure was almost absent. Most of them do not recognize that grades are as much a measure of the institution as of the student. A poor grade may be the fault of the teacher or of some institutional policy. The judgement of the president and faculty as to the institutional quality is largely subjective. No substantial attention has been given to finding how many well qualified candidates drop out and why.

Follow-up

Most institutions have a follow-up program with respect to their graduates. They know that they were placed, that they stayed in the job for a year or more and that the jobs utilized their training to some extent. They do not get much information on the probably weaknesses in the training program. There is little effort to relate information obtained at time of entrance with success in the school or on the job. Each part of the operation, admission, training and follow-up seems to be in separate compartments with a resulting lack of recognition of basic problems or awareness of fluctuations in quality.

Theoretical Considerations for establishing a value system for quality judgement

Thus far, this report has confined itself to a description of the instruments and the reporting of some direct observations and the development of a few simple hypotheses concerning good practices. Actually what is good depends on the value system of the person making the judgement. In order to clarify the assumptions implied in the comments already made a brief theoretical discussion seems necessary.

The Nature of the Problem

Selection practices have different purposes in different institutions. In institutions with a limited curriculum and occupational purpose, selection should restrict the intake to students able to perform suitably in the curriculum and able to meet the occupational requirements of the expected job. Many schools have achieved this purpose. The difficulty in this pattern of operation is that the easiest method of achieving the result is to select students that obviously have the necessary qualifications. In a society with a low technology and limited demand for trained people, the selection and training of the best and only the best was logical. With the development of the computer and other sophisticated automatic machinery the need for untrained people has declined and the need for trained people has mounted to the point that the selection process must admit everyone capable of training rather than just the best. This change in underlying demand of the society has many ramifications and calls for subtle changes in operating procedures and patterns of thinking in almost all institutions for technical education. Even the four-year technical institutions will be under pressure to adjust their curriculum to students, instead of excluding students who may have difficulty in their curriculums. In the technical institutes the pressure will be even greater to modify the curriculum to adjust to the student. So long as the curriculum concepts remain static, the traditional selection process will be the most efficient and hence adhered to in spite of the social need for change. Even in the institutions with an open door policy, some schools have only one level of curriculum for a specific occupational goal.

Modification of curriculum without lowering of standards

Most people when they think of modification of a curriculum confuse it with making it easier or lowering standards. A curriculum can be changed by lowering standards but one should also keep in mind the possibility of getting to the same end by different routes. The New York Central Railroad boasts of its water-level route. This is claimed to be the best route in that it gets to Chicago with a minimum of lifting. The Pennsylvania Railroad has an equally good route but with different advantages. Similarly one may train electrical technicians with an immediate emphasis on mathematics and then practical applications or teach the practical applications, using rules of thumb, and then give the mathematics and theoretical justification of the rules of thumb. The individuals trained in either system would be approximately equivalent when they had completed their course. For students with high mathematical ability the most efficient way of organizing the program probably would be to get the mathematics first but for the person who had had trouble with mathematics such a program might result in failure. He might be able to handle the mathematics after he had seen its results in practice.

The different routes to the same goal is well illustrated in one of the five schools visited. This was a school with a restricted admission policy, i.e. it generally accepted high school graduates above the lowest quarter. It also had special admission requirements for some of the technical programs. In order to reduce the number of refusals in the technical programs and to insure that all capable young people had an opportunity, this institution created a pre-technical program to which it could admit selected persons who had poor high school records. The school reported that about fifty percent of those admitted to the pre-technical program did ultimately qualify for the regular curriculums that they wanted and that of this fifty percent a high proportion became good students, even honor students.

This is such an important point that an illustration of what happened to an individual student seems worthwhile. The illustration shows that in some cases the usual patterns of post high school education would result in the waste of valuable human capacities. John, the student, used as an illustration, was in the middle third of his class in high school; active in student government and sports. His school grades in English were C or below, Social Studies, mostly C's, mathematics and science B's, drawing and Art A's to D's and typing F. His College Entrance Board scores were verbal 458, and mathematics 448. The letter of acceptance from the technical school said:

> "Your high school record indicates that you did not prepare sufficiently to enter a college technical curriculum. If you are to be successful in the Pre-technical program, it will be necessary for you to work very diligently in the areas of mathematics, science and English".

John spent a year in the Pre-technical program and qualified for the technical program. His achievement in the Pre-technical was not brilliant, however. He got some A's and a B in drawing, one B in English, six C's and five D's. The D's were mostly in mathematics and physics. This did admit him conditionally to his desired technical curriculum. He secured one P (poor achievement) in college algebra and trigonometry in the first term of the regular program. After that he never got any grade lower than C and in the last two terms of his course made all A's and B's. On the "Transfer Record Form" for John, sent to the colleges he had selected for getting a bachelor's degree in "Mechanical Engineering" the Department chairman checked "above average degree of motivation and interest in academic studies" and remarked: "This student is maturing at a very rapid rate. Appears to be more dynamic than most of his classmates". John followed a different route than most, but he achieved a high goal. He took an extra year to do it, however. Three of the five schools had alternative programs for certain problems. Only one had a general policy of trying to develop suitable alternatives for all problems.

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Selection related to curriculum

Success with the needed selection process requires a relating of student characteristics to success and failure in specific curriculums and then a relating of success on the job with the various curriculums. This is a complicated and in some ways a confusing statistical job. It requires the accumulation of longitudinal student records and their careful analysis. The purpose of the large study, of which this is a pilot, is to explore the extent to which the technical institutions are conscious of the problem and where conscious of it, what they are doing to meet it. The instruments are designed to elicit this information. One institution has given this a great deal of attention and has an experimental computerized program underway. A second institution is relating the student characteristics to class room achievements.

In general, the five institutions visited did not fully recognize the extent of the problem. Only two were actively engaged in any phase of the statistical analysis required. All indicated an interest in the problem and a desire for more help on it.

The useful practices found

While only one institution visited had a comprehensive system of reporting and control that appealed to the interviewing staff as reasonably complete in following the progress of the individual, all had specific operations that seemed to contribute to the maintenance of quality. None had a comprehensive system of institutional self-evaluation. Among the useful practices were:

1. Special curriculums for persons with inadequate prior education.
2. Specific efforts to help students overcome areas of weakness.
3. In-service training for teachers.
4. Personality ratings by high school staff for pupils to be considered for admission.
5. Careful ratings by teachers and work supervisors involving work habits and attitudes.
6. Extensive counseling to help students select proper programs.
7. Follow-up on graduates to establish kind of job and success in filling it.
8. Placement service to insure that all graduates get jobs.

9. Comparison of characteristics of students with success in school programs.

10. Frequency distribution review of grades given to identify weak spots in curriculum or teaching staff.

11. Lateral transfers from curriculum to curriculum within an institution to help students find a program they like and in which they do good work.

Implications of the findings

1. The selection process must be considered in relation to the program. There is no value in admitting students unless the admitting institution has a program suitable for them as individuals as well as aimed at their goal.

2. Curriculums must be designed for types of persons as well as for job clusters. The pre-technical course discussed in prior sections of this report is an illustration of a course designed for certain types of individuals with certain goals.

3. The selection process cannot be satisfactorily judged until objective standards of educational success have been established. At present no one knows what kinds of marginal students can be helped or what the maximum capacity of a student might be.

4. The selection process must consider the needs of the whole group. From the social point of view, an institution has not established the soundness of its admission policy by showing that everyone admitted succeeded. It also has to show that everyone who might logically have applied and was capable of doing the work was admitted.

5. The establishment of objective standards will require the maintenance and analysis of longitudinal record files. The essence of quality measurement in these institutions is in relating guidance decisions with results and this can only be done by following the individual over a period of years through the whole process of admission, education and early job experience.

General Comments

The most serious difficulty in the selection process from the view point of this study appears to be the limited concept of institutional responsibility generally held by the colleges. Few institutions seem to fully accpet the responsibility of making a success of the student who comes to them. Many merely select the ones that seem to be obviously suited to their programs. Others, the open admission type, consider that they have met their responsibility when they have admitted the student and the student adjusts to their offering or drops out. None of the schools visited had a continuous program of determining why drop-outs occurred or what their characteristics were. In one school visited there was a general effort to open alternative routes specifically designed for the identified needs of particular students or kinds of students and in two others there were limited alternatives.

All of the schools probably have programs that are used successfully for meeting particular problems. The schools with a Pre-technical program or corrective courses illustrate this. These are excellent as far as they go and represent a most commendable alertness on the part of the administrators in seeing a need and meeting it. However, the recognized needs appear to be only a few of the needs. The basic need is for a system of responsibility that will result in statistical analysis of the school operations so that all the needs will be observed and met. To do this, records must be kept of what happens to different kinds of students as they proceed through the technical programs. The policies of the counselors must be checked against the realities of who succeeds and who fails. The failures must all be studied to establish the cause of failure and reviewed to see if the cause is an invariate that cannot be modified. If an adjustment is possible, the technique of the adjustment must be worked out.

One school acting alone can seldom determine the ultimate possibility inherent in each type of pupil because the various potentials will only show themselves in different environments. If expectancies could be worked out in a cooperative program among a group of schools there would be an increasing possibility of getting effective action at the school level. The A.T.E.A. proposes to help in this cooperation or coordination.

The above discussion goes a long way on a weak foundation-observation of five schools. The discussion is only valid if the five schools are representative of all schools. The purpose in carrying the analysis so far on a pilot base is to show the nature of the evidence and the conclusions that can be drawn in a larger study. In other words, to show that the pilot study has demonstrated the need for a larger study and has demonstrated the soundness of the plan and instruments that have been developed.

APPENDIX A

PRELIMINARY QUESTIONNAIRE AND INTERVIEW INSTRUMENTS

The Objectives of the Interviews

1. To establish the purpose of the institution.

2. To determine the way the purpose is translated into a selection process for admission.

3. To determine the way the selection-planning process really operates.

4. To determine how the characteristics of the selected students are recognized in the curriculums of the institution.

5. To determine how the institution selected the curriculums to be offered.

6. To determine how the content of each curriculum was arrived at.

7. To determine if more than one level of instruction is available in each occupational area.

8. To determine the principles of organization assumed in implementing the curriculum.

9. To determine the types of personnel desired to perform the job.

10. To determine the types of personnel actually secured.

11. To identify the principles of grading used in rating student achievement (grading is the usual device used for determining the success and failure of students).

12. To explore the ways in which the institution uses grades or other measures (tests, etc.) to ascertain the quality of work being done by the institution.

13. To explore the criteria of readiness of the student to undertake the work for which he is being trained. (How does the institution arrive at placement recommendations)?

14. To explore the follow-up techniques used to determine the degree of success the institution has had in its training program.

15. To explore the devices, (reports, classifications, etc. used to relate success of individuals on the job with their characteristics as identified at he time of admission and the characteristics of their treatment while in he institution.

Questionnaire to Identify Colleges with Good Selection and Training Methods

1. Name

Address

2. Admission policy

Restricted ____

Open to all ____

Effective occupational training for all ____

Other ____

Please explain

3. Proportion of applicants admitted:

0 - 25% ____

26 - 50 ____

51 - 75 ____

76 - 100 ____

4. Proportion of those admitted trained for a suitable job:

0 - 25% ____

26 - 50 ____

51 - 75 ____

76 - 100 ____

5. Special programs to assist those having difficulty. List briefly.

6. Would you be willing to have your school visited by a team of two investigators for two days?

Yes ____

No ____

7. In what occupational areas do you offer curriculums related to:

(1) engineering

(2) health

(3) agriculture

(4) business

(5) home economics

AMERICAN TECHNICAL EDUCATION ASSOCIATION

Program for Developing and Maintaining Quality in Technical Education

Interview with the President

1. Do you have a written statement of the purpose of your institution that we could use in interpreting your records? Could we have a copy?

    a) Does your purpose imply a responsibility to offer training to all persons capable of benefiting or to a limited number of the best persons applying?

    b) If your purpose is to offer training to the best persons applying, do you have a cut-off point below which you will close up shop before you will accept lower qualifications?

    c) If your purpose calls for training all who can benefit, how do you classify persons applying, into groups for which you will develop suitable curriculums?

    d) Having developed a curriculum, how do you objectively measure its suitability and effectiveness for the group for which it was designed?

    It is the accepted pattern today for secondary school pupils of middle income families to take the college preparatory course if they are capable of it.

    Does your institution attract the high ability group from the college preparatory course?

    Does it attract the middle group?

    The low group?

    Does your program actually result in training people suited to jobs they are trained for or do you train people whose ability is too low to be effective in the field in which they prepared.

    If the answer is yes to attracting high ability students, can your students go on to get baccalaureate degrees without serious loss of time?

2. How do you translate your purpose into an admissions policy?

    a) What are the major items of information that you use in determining whom you will admit?

    b) How have you objectively established that these factors correctly identify the persons applying in terms of your stated purpose?

    c) Does your selection process result in a sufficiently uniform student body within a curriculum so that a single curriculum will be suitable to all wanting that kind of training?

3. Can you outline the process of admitting a student to show how the plan actually works?

a) Do you get the high school record?

b) Do you accept the grades listed or do you have some device for adjusting for variations in high school grading practices?

c) Do you give special admission tests or do you use college boards?

d) Do you make an effort to identify the poor test taker, i.e. the person that one cannot measure in terms of the institutional purpose, by a test?

(poor test results can result from poor reading, emotional blocks, etc., as well as lack of ability).

e) How do you measure personality and other non-academic qualifications?

f) Do you identify students who have had limited opportunities for development and make suitable adjustments for them?

If you do not consider these persons your responsibility, what institutions in your area accept them?

g) Do you identify students with health or emotional problems and make suitable adjustments for them?

If you do not consider these persons your responsibility, what institutions in your area accept them?

4. What are the curriculums that you offer?

a) Do these curriculums adjust for the characteristics of the students admitted or is everyone eligible to all curriculums with the selection of the curriculum dependent on the likes and dislikes of the applicants?

b) Do all programs assume the same capacity for work? i.e. do the programs assume a lock-step with the slow student working very hard and the fast student coasting easily?

c) Do you have any special treatment for the student with a generally satisfactory, but irregular record in high school, i.e. a student with very good records in some subjects but poor records in others?

If you do have a treatment for these people, does it consist of pushing the areas of strength or of weakness?

Is your goal a balanced individual or an extreme specialist?

5. What are the characteristics you seek in selecting your faculty?

a) Do you take any steps to make sure that they have teaching ability?

Teaching know-how?

b) What kind of prior training do you demand?

c) What level of ability do you seek?

High I.Q.

Medium I. Q.

d) Do you seek a stable faculty or do you welcome considerable turnover?

e) What promotional or career possibilities do you offer?

f) Do you have periodic reviews of success on the job?

Are these merely informal subjective reviews by supervisors or do they have elements of objectivity?

What part does your guidance unit play in these?

g) What is your pay scale for teaching personnel? (Answer optional)

6. Can you secure the kind of teaching staff you want?

a) What proportion of your staff meets your standards?

b) What proportion of the staff members hired in the last year meets your requirements?

c) What are the most critical shortcomings in the staff members you have recruited in the last year?

d) Do you consider that your difficulties are due to inadequate money for salaries?

A shortage of the types of persons you want?

. How is your institution organized?

a) Do you have a person in charge of each curriculum?

What systematic records does he receive that tell him how successful his curriculum is?

b) Are instructors assigned to a specific curriculum or does an instructor work in several curriculums?

c) Do the instructors report to a department head for the subject or to a curriculum head?

1. If the instructors report to department heads, how does the department head measure the success of the instructor?

   Does he get reports back indicating the success of the instructor in terms of the purposes of the various curriculums?

2. If the instructors report to department heads, how do persons in charge of curriculum control the teaching in their curriculums?

   In other words, is there a satisfactory channel for both authority and responsibility in achieving quality in curriculums?

d) Do you have student advisors?

1. To whom do they report?

   To the curriculum head?

   To the subject department head?

   To a guidance supervisor?

2. Are they full-time advisors or does each teacher carry an advisory load?

3. How are their reports and findings transferred to curriculum heads,

   Subject department heads?

   To the president in a cumulative report?

4. How are the advisors assisted by cumulative reports of progress?

   Do you have individual longitudinal records for the students?

e) How do you cumulate the student record material for routine reports to the president,

   To curriculum heads?

   To subject department heads?

   To guidance personnel?

8. How do you measure the progress of students in your institution?

a) Do teachers assign grades A,B,C,D,E,F or percentages or is there some other system?

b) What level of achievement do you require for course credit?

   Does course credit insure adequate preparations where one course is a prerequisite of another?

c) How do you make sure that students barely passing a prerequisite are not automatically going to fail subsequent courses? i.e. that their cumulative deficiencies will not swamp them?

   Do you require a point average over and above passing each course?

d) What objective methods do you use to check teacher grades?

e) Do you know how your grades compare with grades in other similar institutions?

f) Do you have any kind of comprehensive examinations that periodically check the quality of work done?

9. Do you consider the grades given to students as two-edged swords, a measure of the success or failure of the student and a measure of success and failure of the teacher and the institution?

a) Do you prepare summary reports of number failing by courses?

Are these consistent or are failures very high in certain courses or with certain instructors?

b) Do you have a percentage of failure level at which you institute corrective action?

c) Do you cumulate reports on students considered capable of earning a bachelors degree to see what proportion successfully transfer into a degree program?

If so, what are the proportions?

10. How do you rate students completing your programs? Can you recommend them for specific kinds of jobs? i.e. has your program trained them well enough for suitable jobs that you can recommend them and have your recommendations accepted by the employers?

Can you place all your students that you recommend?

a) How do you determine whether a person has earned a recommendation?

b) To what proportion of your graduates can you give a recommendation that will get them a job?

c) Will higher educational institutions accept your credits without question?

Does this vary by course? By grade given?

11. Do you have a follow-up program to determine the success of your graduates on the job?

Can you outline the program for us?

a) Does the program indicate the kinds of weaknesses the graduate show, if any?

b) What percentage of those completing your program are successful on the job?

c) What percentage of those completing your program use their training on the job in their first two years of work?

d) What percentage of those completing their training have achieved the level of work expected when they entered?

e) What percentage of those completing two years of college work go on and get a bachelor's degree?

12. How do you relate your follow-up studies to your admission policies and your success as an institution?

13. Have you identified the admission characteristics of persons likely to succeed on particular jobs?

a) Do the characteristics vary sharply from job to job except in general level of ability required. i.e. are some jobs dependent on personality or particular abilities?

14. Do you train primarily for jobs available in your locality or do you offer training that can only be used by migrating from the area?

15. What proportion of your graduates fail to get suitable jobs within six months of graduation?

16. Have we omitted anything that we should have asked concerning your program of achieving and maintaining quality?

17. Are there any services that you need in this area on a consulting basis that are not now available to you?

a) Would you like help in designing methods of insuring the quality of your institution?

b) Do you feel that your institution could properly spend more on insuring quality?

AMERICAN TECHNICAL EDUCATION ASSOCIATION

Program for Developing and Maintaining Quality in Technical Education

Interview with the Dean or Director of Curriculums

1. What is the purpose of the curriculum for which you are responsible?

2. How do you define the persons for whom your curriculum is designed?

    a) Do you have a set of minimum qualifications?

    What are they?

    b) Do you have a set of maximum qualifications beyond which you recommend a higher purpose and a different curriculum?

    What are they?

    c) Do the qualifications involve characteristics other than the ability to master the subjects offered?

3. How does the selection planning process really work?

    a) What percentage of those entering your curriculum complete it?

    b) What percentage of those completing your curriculum find jobs that are suitable for their training?

    c) What percentage of those completing your curriculum go on to higher training, i.e. working toward a bachelor's degree?

    Is your curriculum as good as any other they might have taken in preparation for their advanced work?

4. How are the characteristics of the selected students recognized in the curriculum of the institution?

    a) Are there various levels or paths within a given curriculum for various levels of ability?

    b) Can you provide opportunity for development to those incapable of handling all parts of the ideal curriculum?

c) Where the student has special difficulties to overcome, do you have special plans that will meet his needs?

Can you cite some of these special plans?

d) How do you handle the student with a satisfactory past history who is unwilling to do the work expected of him?

What percentage of the students fall in this group?

What percentage of those failing in this group can you helP?

What percentage of the entrance group ultimately fail to complete your curriculum for this type of reason?

What percentage of the entrance group fail to find a suitable place in industry for this reason?

5. How is your institution organized?

a) What other duties do you have besides designing the curriculum?

b) To whom do you report?

c) What systematic records do you have for establishing the success or failures of your curriculum?

d) Do you have any control over the instructors who are implementing your curriculum?

Do you feel that the instructors should teach a given subject in a different way in your curriculum than in other curriculums that the same instructor may be teaching in?

If so, can the same instructor adjust to the varying needs of the curriculums or do you need to have special instructors for each curriculum?

c) How do you measure the success of the instructor?

Do you feel that your method of measurement makes it certain that a poor instructor will be eliminated?

How many instructors have you found deficient in the past two years?

What are the specific deficiencies you found in these cases?

f) What is your relationship to advisors to students?

Do they report frequently to you on the progress of the students in your curriculum?

g) How do you measure the progress of the student in your curriculum?

Do you use teacher grades?

Do you have in-service training on how to grade?

Do the grades reflect achievement of prerequisites or are they on the probability curve?

Do you have any actual work tests to establish progress in your curriculum?

Do you observe the work habits of your students to determine if they are likely to perform well in the real job situation after completion of the curriculum?

If you find poor work habits how do you correct them?

6. How do you determine the types of personnel you want to implement your curriculum?

a) What do you expect of some typical subject specialists in your curriculum?

English

Mathematics

General Science

Social Studies

Technical laboratory

Drafting

Others

b) Do you have a technique to ascertain if the instructors know how to teach?

c) What kind of ability do you seek?

High I. Q.___ Medium I. Q. ____

d) What kind of prior training do you desire?

What kind do you get?

e) Do you feel that there is a good career opportunity in your institution for instructors?

If not, do you help your capable people to get other jobs?

f) Do you have periodic reviews of the success of personnel reporting to you

Are these informal subjective reviews or are they formal rating devices with some elements of objectivity?

g) Do you feel that the pay scale is adequate to secure the people you need?

7. Can you secure the kind of teaching staff you want?

a) What proportion of those teaching in your curriculum meet your standards?

What are the principle shortcomings?

What are the principle shortcomings of those hired in the last year?

b) Do you consider that your difficulties are due to inadequate pay or a shortage of the types of persons you want?

. How do you measure the progress of students in your curriculum?

a) Do teachers assign grades A,B,C,D,E,F, or percentages?

Or is there some other system?

If there is another system, please explain.

b) What level of achievement do you require for course credit?

Does course credit insure adequate preparation where one course is a prerequisite for another?

c) Do all those completing a prerequisite find the next course reasonable?

Do you allow a person to barely pass successive courses or do you require point averages?

d) What objective methods do you use to check teacher grades?

Do you have periodic job tests or achievement tests?

e) Do you know how your grades compare with grades in other similar institutions?

9. Do you consider the grades given to students as two-edged swords, a measure of the success or failure of the student and a measure of success and failure of the teacher and the institution?

a) Do you prepare summary reports of number failing courses?

Are these consistent or are failures very high in certain courses or with certain instructors?

b) Do you have a percentage of failure level at which you institute corrective action?

c) Do you cumulate these teacher grades and other measures of quality by type of student as determined by admission evaluations?

Are your failure rates very high in any particular categories such as persons with inadequate preparation or emotionally disturbed?

Can you cite examples?

d) Do you cumulate reports on students considered capable of earning a bachelor's degree to see what proportion successfully transfer into a degree program?

If so, what is the proportion?

10. How do you rate students completing your program? Can you recommend them for specific kinds of jobs? i.e. has your program trained them well enough for suitable jobs that you can recommend them and have your recommendations accepted by the employers? Can you place all your students that you recommend?

a) How do you determine whether a person has earned a recommendation?

b) To what proportion of your graduates can you give a recommendation that will get them a job?

c) Will higher educational institutions accept your credits without question?

1. Does this vary by course?

2. By grade given?

11. Do you have a follow-up program to determine the success of the graduates of your curriculum after they are on the job? Can you outline the program?

12. How do you relate your follow-up studies to your admission policies and your success as an institution?

13. Have you identified the admission characteristics of persons likely to succeed on particular jobs?

a) Do the characteristics vary sharply from job to job, except in general level of ability required? i.e. are some jobs dependent on personality or particular skills?

b) Does your experience in terms of characteristics required agree or disagree with the information commonly given in the literature and accepted by your counselors?

14. Do you train primarily for jobs available in your locality or do you offer training that can only be used by migrating from the area?

15. What proportion of your graduates fail to get suitable jobs within six onths after graduation?

1. What percentage of graduates fail to make effective occupational use of their training?

2. What proportion use their training primarily in marriage and homemaking?

16. How do you design a curriculum?

17. Can you outline the process for us?

18. Are there any services that you need on a consulting basis in this area of quality development and maintenance that are not now available to you?

a) Would you like help in designing methods of insuring the quality of your institution?

b) Do you feel that your institution could properly spend more on insuring quality?

AMERICAN TECHNICAL EDUCATION ASSOCIATION

Program for Developing and Maintaining Quality in Technical Education

Interview with the Director of Guidance

1. Do you have a written statement defining your responsibility that we could use in interpreting your records? Could we have a copy?

a) Does your responsibility require that you identify the important characteristics of every person applying?

b) If it does not, how do you define the ones that you can omit from your responsibility?

c) Does your responsibility include defining the suitability of each person for the curriculum he selects?

d) Do you have data from your experience showing how accurate you have been, in the past, in your estimates of suitability of each person to the curriculum of his choice?

If you have such data can we see some of it?

What are the drop-out rates?

e) What data do you normally obtain before admitting a student?

If your institution admits everyone, do you interpret this as making it unnecessary for you to get much data on the entrant?

f) What data do you accumulate in the individual pupil record?

Ability and aptitude tests?

High school record?

Personality Tests?

Health record?

g) How do you measure and record the student's progress?

Courses taken?

Grades received?

Objective tests?

Aptitude tests?

Job success?

h) If you use teacher grades how do you insure their consistency from teacher to teacher, course to course, and curriculum to curriculum?

i) Do you make an effort to identify poor test takers, i. e. the person that one cannot measure, in terms of institutional purposes, by a test?

j) How do you measure personality, motivation and other non-academic qualification?

k) Do you identify students who have had limited opportunities for development and make suitable adjustments for them?

If you do not consider these persons your responsibility, what institutions in your area accept them?

l) Do you identify students with health or emotional problems and make suitable adjustments for them?

If you do not consider these persons your responsibility, what institutions in your area accept them?

. How do you translate your actual experience into improved classifications of students?

a) Are there some classifications whose members practically always fail in certain curriculums?

b) Are there some types of individuals who almost universally fail in your institution when admitted?

What are their characteristics?

c) In allocating individuals to curriculums, do you consider the amount of variability the instructor can handle as well as the ability of the prospective student to perform the work?

Can all students admitted work at the same speed?

If not, how do you adjust for these varying capacities of the individual?

d) Are there definable groups that you are almost sure will succeed?

What percentage of the most likely to succeed fail in your institution?

e) Do many individuals succeed in your institution but fail on the job?

What kind of reports do you have on this?

f) What are the most common reasons for failure in your insitution?

How many of these could be overcome by changes in the program?

Changes in the teacher attitudes?

Changes in the general climate of the group, i.e. modification in inter-student relationship?

g) Is the prospect of failure so high for some persons in some curriculums that it is a waste of their time and the institutions resources to admit them?

h) How do you direct the student into the right curriculum for him?

Is your direction merely a recommendation with the final decision in the hands of the student?

i) What procedure do you have to make sure that each student actually works at a level that is suitable for his ability?

If a student enters a terminal program but has the capacity for a bachelor's degree, how do you inform him of his opportunities?

How do you adjust his work so that he can strive for the higher goal?

j) Do you have any special treatment for the student with a generally satisfactory but irregular record in high school, i.e. a student with very good grades in some subjects but poor records in others?

If you do have a treatment for these people, does it consist of pushing the areas of strength or of weakness?

Is your goal a balanced individual or an extreme specialist?

3. How do you transfer the information you have to various persons needing it?

The chief administrator?

The director of each curriculum?

The Department heads?

The individual instructors?

a) Do you prepare reports showing results by kind of pupil? i.e. those meeting optimum requirements, those with deficiencies, etc.

b) Do you make oral reports to various persons?

Can you cite the persons to whom you report and the frequency of such reports?

c) Are you given clerical assistance to prepare reports?

d) What proportion of the expenditure of your institution goes into guidance?

Is the guidance as much to the institution as to the pupil?

e) Do you feel that the expenditure on guidance is in proper balance to the other activities of the institution?

f) Do you have a cumulative record on each pupil, summarizing his high school record and all the important items in the college record?

Is this in a form that is easy for the student advisor to interpret?

Is it graphic?

4. How is guidance related administratively to the rest of the institution?

a) To whom does the guidance director report?

b) Is all guidance and counseling handled by a guidance staff?

If guidance and counseling is handled by other than guidance staff, who actually does the guidance and counseling?

To whom do these other persons report?

How does the guidance director get systematic reports from them?

c) What responsibility does the guidance director have to those responsible for planning curriculum?

d) What responsibility does the guidance director have for identifying teachers who are failing to achieve suitable results with the students?

To whom does he transfer this information?

e) What responsibility does the guidance director have for placement of graduates?

f) What responsibility does the guidance director have for interviewing applicants for admission?

Are all applicants interviewed?

If so, by whom?

g) What responsibility does the guidance director have for the interviewing of students who are failing or not working up to their capacity?

If this is not the responsibility of the guidance director, who has this responsibility?

5. To what extent is guidance responsible for measuring the success of the institution?

a) Does guidance have an established expectation of the proportion of students that will succeed in each curriculum?

b) Does this percentage vary much from one year to another?

c) Does this percentage vary from one institution to another?

6. How does guidance make sure that course standards are satisfactory?

a) Cannall students passing a course perform adequately in courses for which it is a prerequisite?

b) Has guidance a procedure for identifying a student who has just barely been passing in a succession of courses and is cumulatively falling below the minimum knowledge for successful work?

c) Do you prepare summary reports of number failing by courses?

Are these consistent or are failures very high in certain courses or with certain instructors?

d) Do you have a percentage of failure level at which you institute corrective action?

e) Do you have a level of inconsistency between teacher grades and other objective tests that will trigger corrective action?

How does this operate?

f) Do you cumulate teacher grades and other measures of quality by type of student as determined by admission evaluations?

Are your failure rates very high in any particular categories?

Can you cite examples?

g) Do you cumulate reports on students considered capable of earning a bachelor's degree to see what proportion successfully transfer into a degree program?

If so, what are the proportions?

7. How do you rate students completing your programs?

Can you recommend them for specific kinds of jobs?

Has your program trained them well enough for suitable jobs that you can recommend them and have your recommendations accepted by the employers?

Can you place all your students that you can recommend?

a) How do you determine whether a person has earned a recommendation?

b) To what proportion of your graduates can you give a recommendation that will get them a job?

To what proportion of your drop-outs can you give a recommendation that will get them a suitable job?

c) Will higher educational institutions accept your credits without question?

1. Does this vary by course?

By grade given?

8. Do you have a follow-up program to determine the success of your graduates on the job?

Can you outline the program for us?

9. How do you relate your follow-up studies to your admission policies and your success as an institution?

10. Have you identified the admission characteristics of persons likely to succeed on particular jobs?

11. Do you train primarily for jobs available in your locality or do you offer training that can only be used by migrating from the area?

12. What proportion of your graduates fail to get suitable jobs within six months of graduation?

a) What percentage of graduates fail to make effective occupational use of their training?

b) What proportion use their training primarily in marriage and homemaking?

c) What proportion of your drop-outs fail to get suitable jobs within six months of dropping out?

13. Have we omitted anything that we should have asked concerning your program of achieving and maintaining quality?

14. Are there any services that you need, in this area, on a consulting basis that are not now available to you?

a) Would you like help in designing methods of insuring the quality of your institution?

b) Do you feel that your institution could properly spend more on insuring quality?